

Bradford (E. H.)

THE
TREATMENT OF HIP DISEASE.

BY
✓
E. H. BRADFORD, M. D.

[*Reprinted from the Boston Medical and Surgical Journal,
November 11, 1880.*]

131
LIBRARY

CAMBRIDGE:
Printed at the Riverside Press.
1880.

THE TREATMENT OF HIP DISEASE.¹

BY E. H. BRADFORD, M. D.

AMONG American surgeons the practice of employing extension in the treatment of hip disease is so common that the question of its advantages and special indications is rarely suggested. It, however, is a practice which is not universal in Europe, and which is entirely rejected by some surgeons. That its use is not clearly understood is evident from the fact that its chief purpose is differently stated. It has been regarded as (1) a means of overcoming the muscles spasmodically contracted about the diseased joint; (2) simply a means of fixation of the joint; (3) to separate the bones forming the joint, that is, as a method of "distraction," to use the term introduced by Volkmann. As an attempt to determine the function of extension the writer has made the following observations: An extension of twenty-five pounds was applied to my own leg and thigh. The sensation felt was that of a dragging of the whole trunk, and also of traction, mentally referred to the hip-joint, similar to that felt on pulling the phalanx from the metacarpal bone.

The cadaver of a child ten years old, a dissecting-room subject, was placed at my disposal through the kindness of Dr. M. Richardson. Needles were driven, one into the pelvis and another into the trochanter on the same side; the flesh above and below the needles was incised, so that traction upon the limb, and necessarily involving the soft tissues, did not drag upon the needles. Extension was applied in such a way as not to alter the axis of the limb relatively to the plane of the pelvis, and thus disturb the position of the needles.

¹ Read before the Boston Society for Medical Improvement, June 28, 1880.

The distance between the needles was carefully measured and noted. An extending force of one hundred and fifty pounds was applied, the pelvis being fixed. No difference in the distance between the needles could be noticed on careful measurement.

A second cadaver was offered to me by Dr. Cutler, pathologist at the City Hospital, for experiment. The subject was an adult male, recently dead. Needles were inserted in the same way as has been mentioned. An extending force of one hundred pounds was applied, but no separation of the needles could be observed. The muscles were all severed, the fascia lata cut, which was found to sustain without yielding a great deal of force, and the capsule of the joint was exposed, but not opened. Extension caused no separation of needles inserted one into the neck of the femur and another into the acetabulum. The capsule of the joint was then opened, cutting across the ileo-femoral ligament, but no difference was found in the separation of the needles on extension. The head of the femur was then dislocated and replaced, but even then the needles could not be pulled apart by extension. The head was evidently held in place by the firm fibrous ring which is prolonged from the acetabulum, uniting with the capsule, and acts as a collar, making a complete ball-and socket joint. This was quite evident on examining a number of dissected hip-joints, with the capsules partially removed, but retaining the ring. In one the acetabulum was perforated by a hole, to illustrate the well-known experiment as to the effect of atmospheric pressure. If the hole is uncovered the head of the femur slips out readily. If the opening is stopped by the finger the head is retained in position by the atmospheric pressure. When the process is repeated several times and the fibrous collar becomes stretched and loose, the head can be pulled out easily.

The body of a full-term foetus, preserved in alcohol, was examined. Needles were placed in the pelvis, as

in the other experiments, and traction made by means of weight, great care being taken that there be no extension in such a direction as to disturb the axis of the femur in its relation to the plane of the pelvis. It was found that extension noticeably separated the needles. When a force of ten pounds was applied the separation was one and a half millimetres. When a force of one pound was used the amount of separation was nearly as great, — one millimetre. The soft parts were cut away down to the joint, but leaving the capsule to be seen. Traction separated the femur from the acetabulum, as was readily manifest on inspection without measurement. On dissection it was found that the fibro-cartilaginous collar which surrounds the head of the femur in the adult is absent in the newly-born child.

It appears, then, that extension does not separate the femur from the acetabulum when the parts are in the normal, fully-developed condition. Atmospheric pressure holds the head firmly in place. If, however, the collar, which is essential to a tight ball-and-socket joint, be not firm, the yielding of the soft parts allows the head to be drawn from the acetabulum in the same way that the phalanx can in many hands be drawn from the metatarsal bone. Under what conditions such a relaxation exists, as to permit this is not yet determined; presumably in chronic diseases this would sometimes be the case, and perhaps continued extension brings this result about.

It would seem, therefore, reasonable to infer that the relief given by extension in some cases of hip disease is due to the actual separation of the bones involved in the joint.¹ That this more frequently is not

¹ Experiments similar to the above have been made by Morosoff. (P. Morosoff, Inaug. Dissertation, Charkow, 1875, quoted in the Archives générales de Médecine, 1878, page 718.) He concludes that no separation of the articular surfaces of the hip-joint occurs in the living if the ileo-femoral ligament is intact. He does not appear to have made any observations when this ligament is cut, or on subjects with the capsular collar partially developed. The experiments of Koenig and Paschen (Deutsch. Zeitsch. f. Chir., 1873,

the fact in the early stages of the disease is probable, considering the anatomy of the joint. In these cases, however, the muscular force which in disease draws the femur upwards, crowding the head against the acetabulum or forcing it above the normal position of the latter, is counteracted by thorough extension. It is to this, probably, that the relief obtained by extension in the majority of cases is due. This relief is so marked that there can be doubt of its efficacy as a means of treatment.¹ It is also true that extension, provided the pelvis is steadied, can be made to give efficient fixation, but it is manifest from cases which are frequently met that simple extension without any attempt to secure the pelvis gives great and immediate relief.² That at times, however, pain is not entirely relieved in this way will also be seen, and sometimes in cases which are classed as hip disease extension is even uncomfortable.³ This I have thought might be explained on the supposition that extension relieves muscular spasm and the pain caused by the undue pressure of inflamed surfaces or bone, but not that due to inflamed synovial walls or the distention of a synovial cavity.

To determine this, however, a great deal of pathological and clinical evidence is needed.⁴

No. iii., pages 256 and 272) point to a slight separation from extension; they were made on frozen and apparently not fresh cadavera. Experiments on the knee-joint have been numerous, but do not bear upon the possibility of distraction of the hip-joint. It has been said that if extension causes a separation at the hip-joint the effect will be to bring the under surface of the head of the femur in closer contact with the bony rim of the acetabulum. After dissections in regard to this, I find that this does not happen unless the thigh is adducted to a marked degree.

¹ Cases I., II., III., IV.

² Cases XII., XIII.

³ Cases VI., VII.

⁴ The experiments of Schultze are of value in this connection. He found that extension of a distended joint brought about an increase of the intra-articular pressure, but then an extension of six pounds continued for four or five days effected a diminution of this pressure, either by relaxing the ligaments or bringing about an absorption of the fluid of the joint through an increase of the pressure. (Schultze, *Deutsche Zeitschr. f. Chir.*, 1877, vii., page 76; also

The simplicity of the weight-and-pulley extension has given it a wide-spread popularity, and the relief gained in some cases is so marked as to give it undue credit and hide its defects. If a hospital ward where are a number of patients treated in this way be visited at midnight the defects will be seen. Some will be found lying on their faces, on their sides, with the limbs flexed, frequently in such positions as to transfer the extension from the hip to the knee. The method confines the patient to the bed; it alone gives hardly any steady fixation, except when the pain is so great as to prevent motion; as a means of extension it is not thorough, and it is incapable of preserving the parallelism of the limbs, an indication so important that if neglected a cure sometimes leaves the patient as much of a cripple as an amputation.¹ Combined with other more thorough means for fixation it is capable of excellent service,² but alone it should be regarded as a method for meeting certain indications, but not as a system to be relied on for the best treatment of the disease.

What has been said in regard to the "weight and pulley" is also true of the "physiological method," as it has been termed by Dr. Hutchinson, that is, the treatment by crutches and a high shoe. It meets certain indications, but cannot be relied upon in all the phases of the disease. Patients treated according to this method illustrate that at some stages and in some cases the natural fixation is apparently sufficient,³ and that at times but little extension is needed;⁴ but it is also clear that in many cases the weight of the limb is not enough to overcome muscular contraction, prevent deformity, and give the patient the greatest amount of freedom from the discomfort due to disease at the hip-joint.⁵ As a means of extension it is imperfect, for

Reyher, *ibid.*, 1873, No. iv., page 26, and Ranke, *Centralblatt f. Chir.*, 1875, page 609.)

¹ Case XVI.

² Cases V., XVII.

³ Cases VIII., IX., XI.

⁴ Case XIV.

⁵ Cases XII., XIII., XV.

the reason that it is efficient only when the patient is upright; for fixation, it does not perfectly guard against involuntary motion occurring during sleep; it also is not certain to protect the joint from jar, for in practice many children when not suffering from a painful joint will be found occasionally to kneel upon the affected limb or take a step, unless watched more closely than is usually practicable.¹

The plan of fixing the affected hip-joint by securing the thigh to an iron rod, fastened into an iron cross-piece bent so as to inclose the chest, introduced by Mr. Thomas, of Liverpool,² gives better fixation than can be given in any other way compatible with locomotion, which becomes possible by the help of crutches and a high shoe. Since Dr. Hutchinson's cases have been published, those reported by Mr. Thomas as cured by his method have less value as evidence, as the suggestion is inevitable that many of the cases might have recovered without the use of mechanical fixation. Whether this latter is necessary, and when it is necessary, are questions which can be determined only by further observation. In rejecting extension, except that given by the weight of the limb, Mr. Thomas certainly deprives himself of a valuable aid in treating hip diseases, although he may have been successful without it. The writer has been able to watch in the past five months a few cases treated according to Mr. Thomas's plan. One, an active child too young to use crutches, visibly lost in general condition from the confinement of the splint. Another gained both locally and generally, but complained of the irksomeness of the apparatus. A third has improved, and is free from active symptoms, but is inclined to lay aside his crutches and step on the affected limb. The apparatus is readily furnished and easily taken care of.³

¹ Cases VIII., XI., XIV.

² Diseases of the Hip, Knee, and Ankle. London. 1878.

³ I am indebted to Dr. Post, of Boston, for information in regard to Mr. Thomas's apparatus. Dr. Post, through Mr. Thomas's courtesy, enjoyed the opportunity of seeing a number of the latter's apparatuses.

It has already been shown by the reported cases of others that under treatment by the long extension splint, perfected by Dr. C. F. Taylor,¹ patients may make good recoveries, and the relief which patients evidently obtain from the apparatus shows that the recoveries cannot be considered, as has been stated, the result of natural causes alone, in spite of treatment.

The apparatus meets certain important indications. The limb is well protected from concussion, the joint is fixed against the spasmodic muscular action and the consequent injury, parallelism of the limbs is preserved, a more certain means of extension is given than can be furnished by the weight and pulley, and locomotion is not difficult. The disadvantages are the necessity of careful supervision and the annoyance from the wearing of a splint, adhesive plaster, etc. Designed for the purpose of efficient extension, it is only secondarily a means of fixation, and in cases where absolute fixation is necessary the apparatus is insufficient. The motion of turning or twisting in sleep is not prevented; patients wearing the apparatus will often be found, if visited at night, lying upon the affected side, with pressure upon the trochanter, or on their faces. It has been claimed that if the muscular contraction is thoroughly overcome, as can be done by means of extension, a certain amount of motion at the joint is not injurious. This is probably true, especially in cases of o-titis of the epiphysis with but little adjacent synovitis, but it is certainly desirable to protect the limb from concussion. While the long extension splint efficiently prevents concussion in walking, it does not protect from a jar on the trochanter,—a jar not likely to happen when the patient is awake, but which may during sleep. Therefore, whenever the condition of the patient requires perfect fixation, some other means in addition to the extension splint is needed to prevent the patient from motion during sleep. How much or how

¹ Mechanical Treatment of Disease of the Hip-Joint. New York. 1873.

little injury is done by jar occurring in this way varies with the site of the disease and the habit of the child; in a few cases this has seemed to me to retard the patient's recovery. The objection to the extension splint, that in walking the splint bends and all extension is lost, does not appear to be of value, as when the bending of the splint takes place the weight of the limb is an extending force.¹

Absolute recumbency, with fixation, either in bed or "wire breeches," if for a long period, is a method sanctioned by good usage. Pain will diminish and disappear under this treatment,² and children suffering extreme pain and emaciated from the loss of sleep often gain in flesh and improve in condition when placed under the treatment of complete immobilization and recumbency. This is sometimes advisable, but it is also true that the degree of improvement is limited, and that children after a while remain in a condition beyond which they do not gain. The fact that exercise to children is as important as sunlight for a plant is exemplified in the rapid gain patients frequently show after release from confinement in bed. Now that it has been clearly demonstrated³ that in many cases of hip disease the lesion is in the early stages a caseous degeneration or local tuberculosis in the epiphysis of the head of the femur, and that the joint is not primarily affected, it is certainly bad treatment to subject all cases of hip disease to long confinement as it would be to confine patients with phthisis in order to prevent bronchitis.

The conclusions which the writer has been led to form may be stated as follows: The treatment of hip disease should be based neither upon any one method nor upon the use of any splint. In the course of a long affection involving the femur, the joint, and the

¹ This difficulty can be obviated by a simple arrangement used by Dr. C. P. Putnam, of Boston, and a splint devised by Dr. N. M. Shaffer, of New York.

² Case XIX.

³ Volkmann, *Klinische Vorträge*, 168, 169.

adjacent tissues certain changes take place. The morbid condition is an *ostitis* near the joint, and the subsequent invasion of the latter, or a primary *synovitis* exciting a neighboring *ostitis*; the process is accompanied by a spasmodic contraction of the neighboring muscles, which aggravates the inflammation by increasing the pressure on the inflamed bone. At different times and in different cases one condition, and the consequent indication for treatment, may be more prominent than another; they all, however, need to be borne in mind, and rational treatment consists in thoroughly meeting the indications as they appear. The methods for this purpose will vary according to the experience and skill of the surgeon and the surroundings of the patient, and it is a matter of judgment in each case how far absolute immobilization and thorough extension are demanded, when natural muscular fixation suffices, and when exercise is necessary. The greatest danger is from destructive change of the bone, and not from the *synovitis*, and hence jar upon the inflamed tissues, when caused either by locomotion or by muscular spasm, is especially to be avoided, and this must be done until recovery has so far taken place that there is no possibility of relapse. This requires a long time, during a large part of which motion may not be injurious. The stage when jar must be prevented is longer than the stage when rest is required.

To state the matter briefly, beside the necessity of improving the patient's general condition, it is important, —

- (1.) To prevent jar and injurious motion at the joint.

- (2.) To overcome muscular contraction.

- (3.) To prevent and correct deformity.

Extension is to be regarded as a means for overcoming muscular contraction, for partial fixation of the joint, and, under certain conditions, for "distraction," or actual separation of the bones forming the joint.

CASES ILLUSTRATING TREATMENT.

CASES RELIEVED BY EXTENSION.

CASE I. W., boy, sixteen years old. During the preceding six months the patient had without known cause suffered from attacks of severe pain in the right leg and thigh, worse at night, requiring at times morphia and ether. He limped in gait, and had been growing gradually worse until he became finally confined to his bed. No treatment had been undertaken. On examination the right thigh was found flexed and adducted, allowing no motion at the hip-joint, the adductors were contracted, the glands in the groin were enlarged, the thigh was atrophied. Pain was caused by jarring the limb.

An extension by means of a weight and pulley was applied (eight pounds being used as a weight). No attempt was made to fix the pelvis, and the patient moved in bed. The relief from the pain was immediate and complete. No morphia was needed. Three months later the patient's father reported that he had continued to gain, and that he had been free from pain when extension was applied. The case was not kept under observation, but a year later the boy was heard from, and he was reported to have been constantly gaining.

CASE II. Girl, aged ten, had been under treatment for the preceding year for hip disease, wearing an extension splint. This was removed, and the child suffered no discomfort, until after a fall she was seized with violent pain, referred to the knee, which increased rapidly for three weeks, until the patient required subcutaneous injections of morphia (three times a day, one third of a grain at a time). On examination the right thigh was strongly flexed and adducted, and the whole thigh swollen (subsequently an abscess formed). The slightest jar produced an agony of pain, and of course the least motion was impossible. The patient was etherized, and an extension by weight and pulley

was applied, the limb having been placed in position. The pain ceased immediately, and the patient slept well without a narcotic. The course of treatment was long and tedious, with continued extension and confinement to the bed, but there was no subsequent pain; recovery occurred with the hip ankylosed, but without shortening or adduction. At the present time there is a slight discharge from the sinuses, which remain from the abscess. The patient is able to bear full weight upon the limb, but walks with preference on a splint or crutches.

CASE III. Woman, thirty years old. For some time the patient suffered from occasional attacks of violent pain in the right knee and groin. The patient was brought to the Carney Hospital, with extreme pain on motion, and spasmodic twitching of the muscles of the thigh accompanied by violent pain in the knee and hip. This pain was greatly diminished and in a short time entirely stopped under the treatment by extension with the weight and pulley. A weight of twenty pounds was used and continued for a long time. Discontinuance of the extension or diminution of the weight reawakened the pain. After several months an extension splint was applied; this, the patient stated, gave a greater sense of freedom from discomfort about the hip than an extension by weight and pulley, but it had to be discontinued at times, owing to the cutting of the perineal strap. The patient is at present able to go about wearing the extension splint. The spasmodic contraction of the muscles of the thigh could be easily seen after any motion or jar, and the efficacy of extension in controlling this was manifest and accurately estimated by the patient.

CASE IV. F., boy, aged seven. Hip disease of left hip, of one year's duration. A large abscess had formed in the upper part of the thigh. There was extreme sensitiveness at the hip. The abscess was incised, and an extension by weight and pulley ap-

12 . *The Treatment of Hip Disease.*

plied, and later an extension splint. The relief from pain, which had been quite severe, which was afforded by the extension was very well marked. The boy improved greatly for nearly a year, but subsequently developed plithisis in the left lung, and died with symptoms of general tuberculosis. During the three months which preceded death the hip symptoms, which had been of comparatively slight importance, became more severe. The patient, although annoyed by the irritation caused by the adhesive plaster used in extension, required the extension splint constantly to ease the discomfort at the hip-joint.

On a post-mortem examination the head of the femur was found covered by granulations, and on section a focus of caseous degeneration of the epiphysis was discovered, but no tubercles were seen on a careful examination made by Dr. Whitney.

CONTRACTION OF THE LIMB DURING HIP DISEASE CORRECTED BY EXTENSION.

CASE V. Girl, aged five. Diseased left hip, of six months' duration. The thigh was flexed at nearly a right angle with the axis of the body. This could not be straightened beyond an angle of forty-five degrees, even under ether, without tenotomy and force. There was a good deal of tenderness at the hip-joint, but no evidence of suppuration. An extension by weight and pulley of eight pounds was applied, in the line of the deformity, the thigh and leg being raised by pillows, and the patient kept recumbent. The patient suffered no pain, and in the course of two weeks the deformity was completely reduced, and the thigh perfectly in line with the body.

CASE WHERE PAIN WAS NOT RELIEVED BY EXTENSION.

CASE VI. Girl, five years; hip disease of left limb, beginning with gradual prodromata, attended by attacks of extreme pain. A fourth attack occurred while

the patient was wearing an extension splint which had not been thoroughly applied. This was a severe one, and although the pain seemed diminished to a degree by extension, yet for several weeks the patient suffered extreme pain at night, and occasionally extreme pain in the day. The extension was continuously applied; both weight and pulley, with immobilization in bed, and an extension splint were tried. Extension beyond ten pounds appeared to increase the nocturnal pain. The patient was subsequently removed to a hospital, and died a year later of exhaustion, after the formation of an abscess and several months of suppurative discharge.

RELIEF FROM EXTENSION NOT MARKED.

CASE VII. A girl, aged ten, a delicate child, with a previous history of severe pain, was admitted to the hospital with symptoms of stiffness at the right hip-joint, slight tenderness, resistance to passive motion, except within an arc of ten degrees, and nocturnal pain. There was flattening of the right buttock, with atrophy and contraction of the muscles of the thigh. An extension by weight and pulley was applied, and the patient immobilized in bed. The relief from nocturnal pain afforded by the extension and fixation of the joint was not marked, but the patient gradually improved, and in three or four weeks was free from pain; the muscular stiffness, however, remained for three months. At the end of a year the patient had regained perfect motion at the hip-joint, and was able to walk without a limp. She died suddenly, however, with symptoms pointing to embolus from a valvular disease of the heart. The hip joint on examination was found to be healthy, except that a small portion of the synovial membrane at the insertion of the ligamentum teres in the acetabulum and around the head of the femur was thickened and red. The ligamentum teres was intact, and the cartilage, the rest of the synovial membrane, and the bone, which was sawed through, were healthy.

CASES TREATED BY DR. HUTCHINSON'S METHOD.

CASE VIII. Girl, five years old. The patient had been treated for hip disease two years before, remaining six months in bed, but was supposed to have recovered entirely, and had walked about freely for the past year. Symptoms, however, reappeared, namely, limping, pain in the knee, limitation to motion at the left hip-joint. The limb was slightly abducted. Crutches and a high shoe were given, which the patient has worn for six months, and still uses. An extension by weight and pulley was applied at first, but discontinued by the patient, and it caused some discomfort. The symptoms diminished, and the patient's health improved. At the present time, although there is no deformity, the stiffness on moving the hip-joint remained about the same. The child is liable, when not watched by the mother, to lay aside her crutches, and step upon the limb.

CASE IX. A somewhat similar case, occurring in a girl of the same age, affecting also the left hip. The child has had no inclination to step upon the limb. There has been no increase of symptoms during the treatment, but there has been no diminution of the stiffness at the hip-joint during the five months of continued use of crutches and an elevated shoe.

CASE X. Girl, five years old. The patient has had hip disease for several months. The thigh was badly flexed and somewhat abducted, and there was no motion at the hip-joint. The patient was not suffering from much pain, although pain could be caused by jarring the limb. Crutches and high shoe were furnished, and the treatment was carried out thoroughly. A severe attack of pain occurred, but subsided after putting the child to bed for three weeks and applying a weight and pulley. The crutches and high shoe were resumed, and after treatment of nearly eight months the stiffness at the hip-joint was found to have remained the same; the flexion almost entirely corrected; the

abduction remained the same. The patient's general condition was good, and she was free from pain.

CASE XI. Boy, eight years old, complained suddenly, without known cause, of violent pain in the left hip, causing him to limp in walking. The pain diminished, but the limping continued. On examination, slight limitation to motion was found, and some local tenderness. There was no nocturnal pain. The patient was kept in bed for two weeks; an extension by weight and pulley was applied, but caused the patient discomfort, and was discontinued. The boy was allowed to walk about freely, using crutches and an elevated shoe. This the boy did readily, and remained entirely free from pain. For several months the patient made no attempt to touch the affected limb to the ground, but later he frequently laid aside his crutches and took a few steps without, although the well limb was elevated by a patten four inches high. A few months later, the motion at the hip-joint being perfect, the crutches and high shoe were removed, but the pain returned, and they were resumed, with the effect of entirely relieving the pain. Three months later the crutches were again removed, and at the present time (three weeks later) there has been no recurrence of pain. The motion at the hip-joint is perfect, and there is no limping in gait.

CASE XII. A young lady, twenty years of age. The patient had prodromata of commencing hip disease for a long time, the disease developing slowly. This culminated in an attack of violent pain in the affected (the left) limb, for which she underwent treatment, wearing for a time a long extension splint. The improvement was so great that the patient was considered well, and apparatus was discontinued. After one or two months the symptoms reappeared. The patient was unable to walk; discomfort and pain at the hip and knee occurred at night; there was stiffness on moving the limb, aggravated at night. The thigh was flexed and abducted slightly; there was motion at the

hip-joint only within a limited arc. Pain (referred to the knee) was caused by jarring the limb. The thigh was slightly flexed and abducted. The patient suffered pain on the jar of riding. An elevated shoe and crutches were furnished, and the patient directed to walk about freely and to bear no weight upon the affected limb. An extension by weight and pulley was applied at night, and during the day when the patient was resting. After a year of this treatment, thoroughly carried out, the patient has gained ten degrees of motion at the hip-joint; there is no flexion of the thigh. The patient is able to move her thigh about with much more freedom, and has been without pain. She is, however, at present unable to walk without her crutches. It was manifest in the course of the case that sufficient extension was not gained by the simple weight of the limb to make the patient comfortable. A weight of fifteen pounds was used by the patient when lying down, and she was never as comfortable without as with the extension.

CASE XIII. A girl, fifteen years old. A parallel case to the preceding, except that during a year's treatment there has been no gain in the amount of motion at the hip-joint, and no marked improvement, except in general condition. In this case, as in the preceding, the patient is not so comfortable without an extension by weight as with. Although she goes about constantly on crutches and is a large girl, the weight of the limb alone is not sufficient to prevent the muscular contraction incident to the disease.

CASE XIV. L., a boy aged five. Disease of two years' duration, of the left hip. The patient had been treated by the long extension splint, and had been able with this to walk about freely. Three sinuses remained, discharging moderately; the limb was in good position, without flexion, and with a few degrees of motion, and without pain. The extension splint was removed, and the boy treated according to Dr. Hutchinson's method. The boy continued in good condition,

but the amount of motion at the hip-joint diminished until the joint became fixed. The boy's mother stated that it was impossible to prevent him at times from laying aside his crutches and taking a step upon the lame limb.

MUSCULAR CONTRACTION NOT RELIEVED BY THE
"PHYSIOLOGICAL" TREATMENT.

CASE XV. A girl, six years old. The patient suffered from disease of the left hip-joint, and was treated for nearly six months according to Dr. Hutchinson's method. Although the treatment was carried out with great care, and the patient used her crutches constantly, the extension from the weight of the limb was not sufficient to prevent the thigh from becoming gradually more flexed. On examination at this time the thigh was found at an angle of fifty degrees with its normal line (with the patient recumbent), and there was extreme sensitiveness of the joint. The deformity was gradually corrected by means of extension; a small abscess, however, formed later, and was incised. The sensitiveness of the joint remained for several months. The patient — fifteen months after the first application of extension — goes about readily, wearing an extension splint. Within the past two months she has been entirely free from pain.

CASE ILLUSTRATING A RECOVERY WITH BAD DE-
FORMITY.

CASE XVI. A girl, ten years old, had disease of the right hip-joint when quite young. Was kept recumbent for a year with an extension by weight and pulley. An abscess formed, discharged, and healed; there has been no discharge for six years. The patient has never worn apparatus, but goes about on crutches. She has been entirely free from pain for several years. On examination the right thigh was found flexed at an angle of forty-five degrees with the normal line of the thigh (in a standing position). The thigh was adducted,

and there was no motion at the hip-joint. The trochanter is situated one inch above the Nélaton line. The legs are of equal length, but owing to the flexion and adduction of the thigh the patient is obliged to wear a shoe-lift three and one half inches high to prevent tilting of the pelvis; and although she can bear her full weight upon the affected limb, on account of the deformity locomotion is more comfortable with the help of a crutch.

A CASE TREATED BY ABSOLUTE REST AND EXTENSION.

CASE XVII. A girl, ten years old. The patient for several months had suffered from the prodromata of hip disease, which culminated in a very violent attack which had lasted for ten days. The patient was found in a pitiable condition. Intense pain was caused by the slightest motion or jar. The right thigh was badly flexed and adducted; there was great tenderness, heat, and swelling over the right hip-joint. No treatment had been undertaken. An extension by weight and pulley was applied, with almost immediate relief to the pain. The patient began and continued to sleep well, requiring no opiates, which had been needed. She was subsequently immobilized completely by a wooden frame, which preserved parallelism, allowed the patient to be carried about, and permitted the use of extension by weight and pulley. A few months later an abscess formed and discharged itself, leaving a sinus which remained open discharging slightly for nine months, but healing finally. At the end of a year a long extension splint was applied, and the patient allowed to go about. The improvement in the general condition was rapid. A year later, on examination, perfect parallelism of the limb was found. There was no shortening, and no pain, tenderness, or muscular contraction. There was motion to the extent of ten degrees at the hip-joint. The girl was able to bear her whole weight upon the affected limb, and was desirous of laying aside the splint,

but was directed to continue its use for several months, during the day, removing it at night.

A CASE TREATED SOLELY BY MEANS OF APPARATUS.

CASE XVIII. B., boy, ten years old, suffering from empyema, developed symptoms of hip disease, which was recognized by Dr. Fessenden, of Salem, the family physician. The thigh was held firmly flexed at the hip-joint; the muscular contraction of the adductors was well marked. There was no tenderness, but pain was elicited on jarring the limb, the pain being referred to the knee. Some atrophy of the thigh was present. The boy walked using a cane. A long extension splint was applied and thoroughly attended to by Dr. Fessenden, the patient wearing it for a year. The patient soon became able to go about with freedom, and was entirely free from pain. Motion of the joint developed to about fifteen degrees. The boy's condition, however, remained poor. The sinus from the empyema continued to discharge, and moist râles could be heard over the lung. April, 1879, a large abscess had formed in the vicinity of the hip-joint; this was aspirated by Dr. Fessenden, and afterwards discharged itself, leaving a sinus, which healed in three months. Several months later the extension splint was discarded, and one applied designed simply to prevent jar upon the limb in locomotion; this was worn for nine months, there being during this time an improvement in the general condition. At the present time there is perfect parallelism of the lower limbs and no shortening. The trochanter is in its proper place, and slight motion remains at the hip-joint. The sinus in the thigh has not discharged for a year; the boy is able to walk about freely, though with a limp. There has been for more than a year perfect freedom from pain, tenderness, or muscular spasm on jarring. Two months ago apparatus was removed, and at the present time there has been no evidence of a relapse. This is still possible, as the boy's general condition is not good. Râles are still to be

heard in the lungs, and the sinus from the empyæma continues to discharge.

SYNOVITIS OF THE HIP-JOINT; RECOVERY AFTER
ABSOLUTE REST.

CASE XIX. A healthy girl, five years old, a patient of Dr. Tarbell of Boston, was suddenly seized with extreme pain in one limb. There had been no prodromata except that the child had been noticed to limp a few weeks before. The pain was intense, particularly severe at night, and the patient required opiates. The slightest jar caused violent pain. The pain increased for a week, and began to diminish, but was aggravated by changing the sheets. On examination the child was found lying with both thighs flexed and abducted. The patient could move the toes and ankles, and such slight motion of the knee (the patient lay with the thighs spread apart and the legs bent at the knee) as did not move the thigh was possible, but any motion disturbing the hip-joints caused intense pain. There was no fever, and none of the other joints were affected, but there was swelling and tenderness over both hip-joints. As the child was absolutely immobilized by the disease, nothing mechanical for the purpose was tried. Extension was not used, as the pain had been decreasing. In a few days this had diminished greatly, and in a short time had disappeared. In a month the patient regained perfect motion at the left hip-joint, but some muscular resistance remained at the right hip, and a light extension by weight and pulley was applied. In three months the child walked about freely, and six months later she was considered perfectly well by her parents. There has up to this time been no relapse.

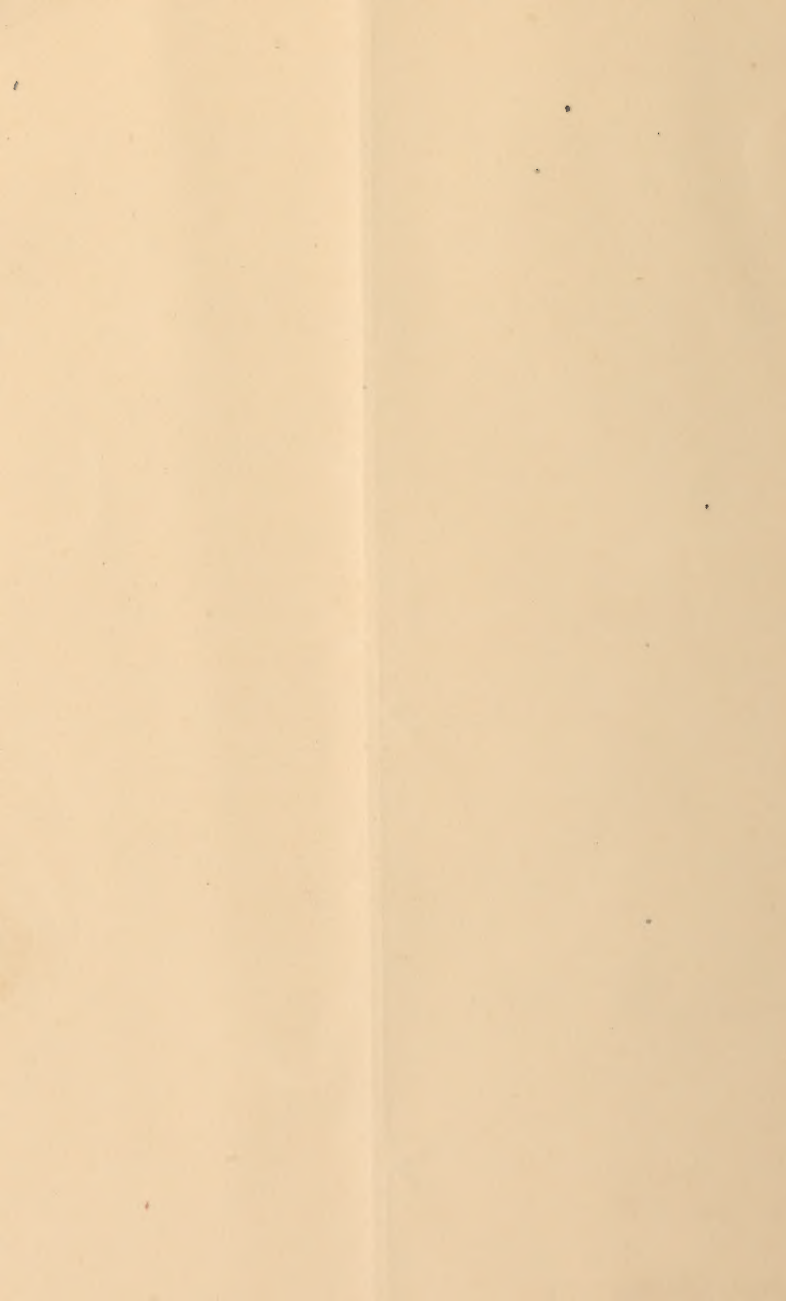
A CASE SHOWING THE NECESSITY OF CONTINUING
EXTENSION FOR A LONG PERIOD.

CASE XX. A girl, nine years of age, who had been treated at various charitable institutions for hip disease,

during a period of two years, entered the Children's Hospital, in the summer of 1878, with the left thigh badly flexed and slightly adducted, and a great deal of sensitiveness on jarring the limb. The deformity was such that the patient was unable to walk without a crutch. The limb was straightened gradually by means of extension. The patient needed for comfort a great deal of extension, but walked about readily with the extension splint well applied. This she has worn constantly for two years, attending school and enjoying excellent health. The limbs are nearly parallel; there is no shortening, and no pain or tenderness at the joint. The patient's condition was so good that the extension splint was removed, but after a week the thigh became slightly flexed; this increased until the extension splint was again applied.

NOTE. — The following case came to notice as this article was going to press. It appears to illustrate the disadvantages of Mr. Thomas's splint.

CASE XXI. A boy aged five, with hip disease, had been treated for several weeks by complete fixation in bed and an extension by weight and pulley. The symptoms, which had been acute, had subsided. There was no swelling, pain, or tenderness about the hip, and the case had been progressing favorably for some time. A Thomas splint was applied and accurately fitted. On the following night there was severe nocturnal pain, which increased on the next night. The next day the hip was found swollen and tender, and the limb sensitive on jar. The symptoms all disappeared immediately on removal of the splint and the readjustment of the extension. The boy has since been progressing well, as before. The coincidence was so marked that there could be no doubt that the disease had been aggravated by the splint, and that this exacerbation was stopped by its removal. It should be said that in six other cases where Thomas splints were applied nothing of this sort has occurred.



BOSTON MEDICAL AND SURGICAL JOURNAL.

ENLARGED WITHOUT INCREASE OF PRICE.

THE marked success which has followed all the methods adopted, within the past few years, to increase the value and enlarge the scope of the *Boston Medical and Surgical Journal* has induced the proprietors to make another change, which its patrons can hardly fail to approve and value highly. The JOURNAL, beginning with January 1, 1880, was changed from octavo to quarto form, and printed in double columns; the number of pages of reading matter was made twenty-four. By this change about one fifth more matter is now given than before, which enables the proprietors of the JOURNAL to make it more nearly what they have long aimed at, and what they believe the medical profession now needs, a *National Medical Newspaper*, which interferes with no local journals, but affords a medium for a general interchange of medical opinion, and which furnishes its readers all kinds of information useful to physicians, surgeons, and others whose business brings them in contact with the profession. This information must be very comprehensive, including articles of great scientific value from the "authorities," discussions of methods and results of practice, and the freshest medical news.

None of those features which have proved so satisfactory in the *Boston Medical and Surgical Journal* have been discontinued. — Clinical lectures by eminent professors, special papers on topics of large and general interest by distinguished practitioners, reports of interesting facts and medical news from all important centres, reviews of new medical works, and such bibliographical information as may be of value to the profession. All these are continued and enlarged, and new features have been added.

Medical jurisprudence is included, at least so far as to give sufficient abstracts of cases involving interests or principles that concern the members of the profession as individuals. New medicines, new uses or applications of remedial agents already known, and information of value to druggists, as well as to physicians, receive attention.

In short, it is proposed to make the Journal so comprehensive in scope and so practical in character, and including so fully and in so desirable form all the various kinds of information and discussion that may properly be embraced or sought in a medical journal, that it will be indispensable to every American physician.

It has enlisted in its service, as editors and contributors, many of the ablest and most distinguished professors and practitioners of medicine and surgery in the United States, and the original papers and discussions it contains are of the first value to all physicians and surgeons in active practice. Without disparaging any other medical journal it may fairly be said that no surgeon or physician can afford to be without the BOSTON MEDICAL AND SURGICAL JOURNAL.

All its contents are *original*, its reports and news, as well as the elaborate papers on important topics of theory and practice.

N. B. *Although the JOURNAL contains so much more matter than heretofore, its price has not been increased.*

The JOURNAL continues under the editorial management of Dr. J. COLLINS WARREN, who is assisted by Dr. A. L. MASON, Dr. GEORGE SHATTUCK, Dr. G. W. GAY, Dr. HAMILTON OSGOOD, of Boston; Dr. P. BRYNBERG PORTER of New York; Dr. FRANK WOODBURY, of Philadelphia; Dr. WM. LEE, of Washington; Dr. NORMAN BRIDGE, of Chicago; Dr. M. H. POST, of St. Louis; Dr. MIDDLETON MICHEL, of Charleston, S. C.; Dr. V. O. HARDON, of Providence; and Dr. WILLIAM CHILD, of Bath, N. H.

TERMS: \$5.00 a year, in advance; single number, 15 cents.

N. B. — A life-size portrait of Dr. OLIVER WENDELL HOLMES will be furnished for One Dollar to any subscriber to the JOURNAL.

HOUGHTON, MIFFLIN & CO., Publishers, Boston, Mass.